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ABSTRACT

This study examined the effects of attitudinal flexibility on changes in intellectual functioning in the elderly over a 7-year period through the use of linear structural equation modeling. Older adults (N=181) were surveyed about their health problems, leisure activities, social contacts and resources, stressful life occurrences, and current psychological health. This information was matched with their personality and cognitive test score data assessed in 1977 and in 1984. Results from covariance structure modeling indicated that attitudinal flexibility appeared to have a weak positive influence upon engagement in an active lifestyle. Active lifestyle, however, was only slightly predictive of changes in intellectual functioning. A moderately strong positive correlation was observed between intelligence and attitudinal flexibility in both 1977 and 1984, but this relationship was not predictive of continued maintenance of ability. The role of attitudinal flexibility as a mediating influence on stress and health was confirmed: attitudinal flexibility reduced the effects of health problems for individuals experiencing many stressful life events. Health problems were significantly related to declines in intellectual functioning, suggesting that attitudinal flexibility has a beneficial indirect influence upon cognitive functioning. (Author)

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ATTITUDINAL FLEXIBILITY AND INTELLECTUAL FUNCTIONING IN THE ELDERLY

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ABSTRACT

This study examined the effects of the personality trait attitudinal flexibility on changes in intellectual functioning in the elderly over a seven-year period through the use of linear structural equation modelling. It was theorized that attitudinal flexibility would have a facilitating effect on life stress and health problems and the engagement in intellectually and socially complex lifestyles, thereby influencing the maintenance of cognitive abilities in the elderly.

181 participants in a longitudinal study of psychological aging (ages 64-93) were surveyed about their health problems, leisure activities, social contacts and resources, stressful life occurrences, and current psychological health. This information was matched with their personality and cognitive test score data assessed in 1977 and 1984. Results from covariance structure modelling indicated that attitudinal flexibility appeared to have a weak positive influence upon engagement in an active lifestyle. However, active lifestyle was found to be only slightly predictive of changes in intellectual functioning. A moderately strong positive correlation was observed between intelligence and attitudinal

flexibility in both 1977 and 1984, but this relationship was not predictive of continued maintenance of ability.

The role of attitudinal flexibility as a mediating influence on stress and health was confirmed: attitudinal flexibility was found to reduce the effects of health problems for individuals experiencing a large number of stressful life events. Health problems were significantly related to declines in intellectual functioning, thus attitudinal flexibility has a beneficial indirect influence upon cognitive functioning. As predicted the affect of attitudinal flexibility on health problems was not observed for the low stressful life events condition.

ATTITUDINAL FLEXIBILITY AND INTELLECTUAL FUNCTIONING IN THE ELDERLY

Results from several longitudinal studies have led to the conclusion that, although there are small but reliable decrements in performance on some cognitive tasks in the middle years of adult life (Hunt and Hertzog, 1980), cognitive decrement of a substantial magnitude does not occur prior to age 65 (Schaie, Labouvie, and Buech, 1973; Thomae, 1976; Botwinick, 1977; Schaie, 1983). Furthermore, while some individuals begin to show significant declines in performance at around this age, others continue to exhibit no decline well into their eighties. Thus the pattern of change is one typified by increasing variability: some people maintain or even improve slightly in their performance on cognitive tests, while others suffer substantial declines (Schaie, 1984).

Why age-related change in cognitive functioning varies so much in individuals over the age of 65 has become an increasingly important area of inquiry for researchers in the field of adult cognitive development. The task of describing and explaining the nature of these individual differences has been characterized as the fundamental research task for the field of cognitive gerontology (Hertzog, 1985).

Researchers are particularly interested in identifying any personality and lifestyle variables, present in middle adulthood, which are strong predictors of intellectual functioning in old age. Determining what these predictors are would help us understand the basis for these large differences in age-related change in abilities. The identification of environmental components to the aging process could suggest possible interventions. This is not true for many biological components, particularly those controlled by heredity.

The average elderly person certainly is interested in identifying and understanding the nature of individual differences in cognitive change as well. Discussions between gerontologists and laymen invariably center on such questions as: 1) are they themselves going to maintain their own cognitive skills, and 2) what can they do to enhance or maintain these skills as they grow older? (Hertzog, 1985).

What are the variables known or thought to be important predictors of cognitive change? Prior intellectual ability has been shown to be a predictor of subsequent performance, particularly during that phase of life prior to age 65 when abilities remain relatively stable (Hertzog, 1979; Stone, 1980; Schaie and Hertzog, 1983). Cardiovascular disease has been shown to have an unfavorable effect upon the maintenance of intellectual functioning in old age (Hertzog et al, 1978). In addition, there are a number of lifestyle and personality factors known to have or suspected of having an influence upon

the cognitive aging process.

These lifestyle and personality factors may be amenable to change, either through the individual's own conscious decision process, or mediated by environmental interventions designed to facilitate lifestyle changes. In contrast, cardiovascular disease or ability status are much more likely to be related to factors that are either largely inherited, or are the outcome of early childhood experiences resulting from environmental factors largely determined by parental socioeconomic status. Three lifestyle and personality factors appear to be particularly relevant: maintenance of intellectual stimulation, attitudinal flexibility, and mastery of life stress.

Results of research by Gribbin, Schaie, and Parham (1980) suggest that one factor affecting the maintenance of cognitive abilities in later adult life is participation in an active and complex lifestyle. Those individuals who report engaging in lifestyles which take advantage of varied opportunities for environmental stimulation, social interaction, and intellectual challenge appear to show less decline on ability tests than those who do not. Perhaps the same "use it or lose it" principle that applies to maintaining physical ability also applies to mental ability (Schaie, 1983).

The relationship between intellectually stimulating pursuits and maintenance of abilities has thus far been shown to be reciprocal rather than causal in nature (Stone, 1980; Schaie

and Willis, 1986). On the one hand, it appears that persons who maintain their abilities are more likely to seek out experiences of an educational nature; while, alternatively, exposure to intellectually stimulating experiences are probably instrumental in maintaining stable levels of intellectual functioning into old age.

Another finding by Schaie and his colleagues suggests a causal relationship between attitudinal flexibility, a personality construct, measured in midlife, and the maintenance of cognitive abilities in later adult life. Data from cross-lagged correlations show significant relationships between attitudinal flexibility measured at midlife and performance on five of Thurstone's Primary Mental Ability subtests measured fourteen years later. For instance, the correlation between Inductive Reasoning in 1977 and Attitudinal Flexibility in 1956 was found to be .55, compared to a falsification correlation of 1977 Flexibility with 1956 Reasoning of .27 (Schaie, 1983). The influence of attitudinal flexibility appeared to be largely unrelated to any strong concurrent correlation between the personality construct and the ability measures, suggesting an indirect causal link between them.

The literature on stress, anxiety, and coping provides evidence that stressful life events can have a debilitating effect on cognitive functioning as well as on one's health and psychological well-being (Amster and Krauss, 1974; Fiske, 1980). Other findings from the same literature also suggest

that some individuals are relatively immune to the debilitating effects of a stressful environment. The individuals who exhibit such "hardiness" were found to differ from those who do not on some personality and individual difference measures, most noteably: sensation seeking (Johnson and Sarason, 1979; arousal seeking (Johnson, Sarason, and Siegel, 1979), self-reported vigorousness, adventurousness, and commitment to self (Kobasa, 1979). Since attitudinal flexibility measures an individual's readiness to perceive and adjust to new and unfamiliar events and social situations (Schaie and Parham, 1975), it seems reasonable to believe that the attitudinal flexibility trait may tap some of the personality constructs mentioned above (e.g. sensation seeking, arousal seeking, and adventurousness).

It is theorized that attitudinal flexibility has a facilitating effect on successful adjustment to life stress and the engagement in intellectually and socially complex life styles, thereby influencing the maintenance of cognitive abilities in the elderly. It is hypothesized that attitudinal flexibility has a direct influence upon the maintenance of an intellectually and socially complex lifestyle (Schaie, 1983; Gribbin, Schaie & Parham, 1980). Possession of the personality trait attitudinal flexibility predisposes people to engage in new projects. Furthermore, because they are flexible and interesting people to be around, open to new ideas and experiences, it is likely that the attitudinally flexible individual receives more invitations and opportunities to

participate in stimulating events. This environmentally enriched lifestyle should in turn have a positive influence on the maintenance of cognitive abilities, particularly those which test skills frequently under-utilized in an elderly population.

Secondly, it is hypothesized that attitudinal flexibility contributes to reduced psychological distress and enhanced coping with life stressors, particularly the effects of chronic health problems. Attitudinally rigid individuals are predicted to be more anxious and less tolerant of stress (Johnson and Sarason, 1979; Johnson, Sarason, and Siegel, 1979). Stressful events should cause them to reach their stress thresholds more quickly than attitudinally flexible individuals. As a result they will be more likely to reduce their interaction with their environment as a way of reducing stress (Mehrabian and Russell, 1975). Because they're less adaptive to stressful situations, such individuals will have a strong preference for habit and a dislike for new situations or environments that provoke uncertainty. They will have learned that the habitual way of doing things is the least stressful.

Consequently, it is theorized that attitudinal flexibility should function as a moderator variable in the relationship between stressful life events and psychological distress, including the perceived effects of health problems. Particularly in high stress life situations, attitudinal flexibility should enhance psychological functioning by reducing the psychological distress resulting from stressors.

Reduced psychological distress and enhanced psychological well-being in turn should contribute to enhanced social functioning, particularly where it involves social participation and engagement in stimulating intellectual activities. Reducing the effects of health problems and increasing social involvement should both contribute to the maintenance of cognitive abilities.

METHOD

Design

The study design was a two-wave longitudinal panel, with observations on attitudinal flexibility and intellectual ability at two points in time, separated by a seven-year period. Collection of the data for the intervening variables occurred only during the subsequent time period. These survey data supplement data collected previously by the Seattle Longitudinal Study, a study of psychological aging begun by Dr. K. Warner Schaie at Group Health Cooperative of Puget Sound in 1956. Samples of adult enrollees in this health maintenance organization (HMO) were selected and tested on five of Thurstone's Primary Mental Abilities (PMA), as well as the Test for Behavioral Rigidity, and later retested in 1963, 1970, 1977, and 1984.

Participants

The participants (109 women and 72 men) ranged in age from 64 to 93 (mean = 73.2 years; SD = 6.21). Mean educational level

was 13.9 years (SD = 2.98). There were no sex differences in age or educational level. All subjects were participants in a training study to improve or remediate performance on spatial orientation and inductive reasoning (Schaie and Willis, 1986), although for this study only their pretest scores from 1984 were considered as outcome measures. All had been participants in the Seattle Longitudinal Study since 1970 or before.

Median household income was $23,172, with two respondents reporting household incomes under $5,000 and ten with incomes over $50,000. Only 14 of the respondents were not retired from regular, permanent employment at the time of the survey. All subjects were community dwelling, with 70% married and living with their spouse, 24% living alone, and 6% living with their children or sharing living arrangements with others. 97% of the subjects were Caucasian. Comparison of the demographic data with U.S. Census and National Center for Health Statistics national survey data reveals this group of individuals to be above average in education and household income, and somewhat healthier than the population of comparable individuals over the age of 65. For example, only 13% rated their health as fair or poor compared to 32.6% of the 1983-84 NCHS sample (National Center for Health Statistics, 1987). Prevalence rates for chronic conditions were usually lower as well: 30.6% reporting hypertension compared to 39.5% in the U.S. population; 5% reporting diabetes compared to 9.1% in the U.S. population; and 50.6% reporting arthritis compared to 48.6% in the general population of those over age 65.

Measures

Four exogenous variables (attitudinal flexibility assessed in 1977, household income, educational level, and age) and six endogenous factors (health problems, life stress, psychological well-being, active lifestyle, and intellectual functioning assessed in both 1977 and 1984) were conceptualized as having important roles in the theoretical model. The principal outcome variable, intellectual functioning, was assessed by five of Thurstone's Primary Mental Abilities: verbal meaning, space, reasoning, number, and word fluency (Schaie, 1983).

Attitudinal flexibility was assessed by a 10-item abridged scale of the R scale from the Test for Behavioral Rigidity (Schaie & Parham, 1975). The abridged scale had an internal consistency alpha coefficient of .74, and a 7-year stability coefficient of .71. Four scales and a single item appraising self-perceived health status were used as measures of respondents' physical health problems and level of health functioning. All four scales were drawn from the questionnaire used in the Alameda County population study, a longitudinal community-based epidemiological study of health and ways of living (Belloc et al., 1971). Although collected concurrently, the retrospective nature of the health events and other stressful life events measures gives some justification for conceptualizing them as being antecedent to and causal upon the psychological well-being, life stress, and lifestyle variables.

Procedure

A covariance matrix was computed and a structural equation model was tested for the first hypothesis after an initial confirmatory factor analysis model had been tested to work out measurement model difficulties. Because attitudinally flexible individuals were thought to be more adaptive to stressful situations, it was predicted that attitudinal flexibility would reduce the effects of health problems and other stressful life events for those individuals experiencing a high number of stressful life events. Under low stress situations it was hypothesized there would be no relationship between attitudinal flexibility and health problems. To test this second hypothesis the sample was split between those experiencing a low number of life stressors (N = 79) and those experiencing a high number (N=85), based on the median stressful life events (SLE) score (median = 4.0). Covariance matrices were computed and structural equation models were tested separately for each group.

RESULTS

The correlations and standard deviations of the observed variables for the model of the effects of attitudinal flexiblity upon active lifestyle and intellectual functioning are shown in Table 1. The analysis of these relationships began with an initial estimating model based upon the theoretical model. This

model had a Chi-square goodness-of-fit value of 151.35 (df = 92, $p < .001$), a Goodness of Fit Index (GFI) value of .55, and a RMS residual of 3.29 (Joreskog and Sorbom, 1981). The model was respecified to allow for the influence of 1977 intellectual functioning upon active lifestyle. The respecification resulted in a significant improvement in fit of the model and a significant reduction in Chi-square (Chi-square = 13.26, df = 1, $p < .001$). The model was again respecified to allow for the influence of household income upon active lifestyle (Chi-square = 4.19, df = 1, $p < .05$). Finally, it was necessary to drop the causal paths between attitudinal flexibility and active lifestyle, and between active lifestyle and intellectual functioning in 1984, because their parameter estimates--although positive--did not differ significantly from zero.

Figure 1 presents the results of the linear structural equation modelling as a path diagram with standardized coefficients. The influence of household income upon active lifestyle appears to be counter-intuitive, suggesting that those with higher family incomes tend to be less engaged than those with lower incomes. However, one confounding influence is the effect of marital status: in general the respondents reporting higher household incomes are married and living with their spouse. It's likely that the activities of married couples may not be completely reflected in our lifestyle activity measures in that married couples may be less dependent on others for social and intellectual stimulation.

Both educational level and prior intellectual ability had significant positive impacts upon active lifestyle. It is important to note that 84% of the variance in 1984 intellectual functioning is explained by prior ability. This leaves only a small portion of the variance to be accounted for, although there appears to be little support for the hypothesis that attitudinal flexibility and an active lifestyle affect subsequent intellectual functioning over the period of time and range of ages in question.

The correlations and standard deviations of the observed variables for the high stressful life events model are shown in Table 2. The initial estimating model for the high SLE sample included age as a covariate and had a Chi-square goodness of fit of 370.63 (df = 315, p = .02). Examination of the t-values for the structural parameters revealed that three causal paths had parameter estimates less than twice their standard error estimates and were probably not significant: 1) the effect of education on intellectual functioning in 1977, 2) the effect of age on health problems, and 3) the effect of income on life stress. These causal paths were fixed at zero and the model reestimated. The increase in Chi-square was insignificant (Chi-square = 4.25, df = 3, p > .20), confirming that the parameters did not contribute significantly to the overall fit of the model.

The final model had a Chi-square goodness of fit of 374.88 (df = 318, p = .02). Although the final fit of the model can be

rejected at the .05 criterion level and cannot be judged as sufficient in the absolute sense, there were no large residual values in the matrix of residual covariances, and there were no modification indices greater than 5.0. We had to conclude therefore that no further improvements could be made to this model. The final model had a GFI of .14 and a RMS residual of 3.52.

A path diagram for the final model, with the significant structural parameters represented by solid arrows, is shown in Figure 2. The hypothesis that attitudinal flexibility reduced the effects of health problems and other stressful life events was confirmed by the inclusion of a significant causal path between attitudinal flexibility and health problems. Removing this path from the model results in a significant increase in lack of fit (Chi-square = 5.64, df = 1, $p < .02$). No direct effects of attitudinal flexibility on life stress or psychological well-being were significant, although indirect effects are demonstrated in the final model through the reduction of health problems.

DISCUSSION

The results indicate that, for this age range and across the time period of seven years, attitudinal flexibility has no direct effect upon changes in intellectual functioning. This does not mean that there is no role for the personality trait in explaining intellectual performance: those with higher

flexibility scores continue to have significantly higher intelligence tests scores, but this moderately strong concurrent correlation is not predictive of continued maintenance of these intellectual abilities.

Attitudinal flexibility may have a weak effect upon the maintenance of an intellectually stimulating and socially complex lifestyle. This relationship was positive in each instance tested but was significant only for a sub-model of intellectual functioning using the spatial orientation ability measure only. However, prior intellectual ability was found to have a much greater influence upon active lifestyle. Education was also found to be a significant predictor of active lifestyle.

An active lifestyle was not found to be significantly predictive of changes in intellectual functioning. However, judging from the correlation coefficients between the intellectual stimulation measure and the ability measures, it is probably safe to say that certain intellectually stimulating leisure activities are beneficial to the maintenance of cognitive functioning in the elderly. However, the strongest predictor of who will engage in these activities is prior intellectual ability.

The principal finding upon which this study was based was Schaie's (1983) discovery that attitudinal flexibility in midlife predicted changes in cognitive functioning in early old

age. We believed it was reasonable to assume these results would extend to a later period of the adult lifespan, i.e., that attitudinal flexibility in individuals in their 60's would tend to predict changes in cognitive functioning in their 70's and 80's. It now appears, based upon these results, that if attitudinal flexibility does indeed promote intellectual functioning, it does so at an earlier age than studied.

Recent findings by Schaie (1984) suggest that attitudinal flexibility does have salient importance in maintaining activity on the fluid abilities (spacial orientation and inductive reasoning) during early middle age. He concludes that the attitudinally rigid person is likely to establish lifestyles which, through disuse, lead to early decline on these intellectual abilities. He further speculates that the effective utilization of all abilities may be impacted by this loss of fluid problem solving ability resulting from early behavioral rigidification. Such a process could be the cause of the large differences in performance levels observed by age 65 between the attitudinally rigid and attitudinally flexible individuals.

The practical implication of all this appears to be that interventions aimed at changing personal habits to facilitate successful aging need to occur much earlier in life than the sixties and seventies. Interventions designed to improve ones attitudinal flexibility with an eye towards improving ones

prospects for maintaining and improving the cognitive abilities at age 65 would not be effective.

The role of attitudinal flexibility as a mediating influence on stress and health was confirmed: attitudinal flexibility was found to reduce the effects of health problems for individuals experiencing a high number of stressful life events. It may do this either by making these individuals less susceptible to such problems, or more likely by enabling them to cope more effectively with their occurrence. Health problems were significantly related to declines in intellectual functioning, thus attitudinal flexibility has a beneficial indirect influence upon cognitive functioning. As hypothesized, no such relationship was found for the low stressful events condition.

Two relationships between attitudinal flexibility and the measures that comprise the health problems factor stand out: the correlation between attitudinal flexiblity and perceived health status, and attitudinal flexiblity and the degree to which individuals cut back in activities in response to health problems. It appears that attitudinally flexible individuals have not allowed health problems and other stressful events to impact their daily lives as much as the attitudinally rigid individuals have. One's response to a major life stressor--whether you let it overcome your lifestyle or whether

you persevere and go on with as active and fulfilling a life as you can--appears to influence intellectual performance among the elderly.

The practical implications may be twofold. It is known, for instance, that a patient's attitude can have an important influence upon the outcome of a disease or the severity of a medical condition. It may be possible to change the dispositional set of patient's afflicted with chronic medical conditions, to train them to approach the handling of their disability or ailment with a more flexible attitude. The possible rewards may include reduced symptoms, improved functional status, and, over the long term, the maintenance of their cognitive abilities.

Alternatively, physicians, therapists, and geriatric social workers may wish to take a patient's degree of attitudinal flexibility into account when making treatment decisions. The attitudinally flexible individuals appear to be more adaptive to change, and providing more choices or exploring more treatment alternatives may be more appropriate with these patients. A health regimen that involved more lifestyle changes may be more acceptable and less threatening to these people than to the more attitudinally rigid.

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Table 1

Correlations and Standard Deviations of Observed Variables for Model with General Intellectual Ability, Attitudinal Flexibility, and Active Lifestyle

(N = 169)

Att.Flx.77	1.00															
Income	.36	1.00														
Education	.43	.34	1.00													
Verbal 77	.38	.41	.30	1.00												
Space 77	.17	.23	.07	.32	1.00											
Reason 77	.38	.28	.35	.67	.41	1.00										
Number 77	.09	.26	.18	.38	.16	.42	1.00									
Word 77	.29	.15	.22	.48	.12	.42	.30	1.00								
Intel.Stim.	.25	.09	.26	.32	.14	.36	.24	.34	1.00							
Grp. Partic.	.20	.03	.19	.13	.06	.08	-.03	.06	.21	1.00						
Soc. Contacts	.04	-.02	.10	.01	.04	.11	.09	.10	.30	.14	1.00					
Verbal 84	.35	.45	.31	.79	.39	.66	.40	.36	.35	.08	.16	1.00				
Space 84	.20	.33	.14	.36	.66	.44	.21	.16	.13	.07	.09	.49	1.00			
Reason 84	.29	.24	.27	.57	.33	.79	.42	.43	.35	.16	.08	.67	.43	1.00		
Number 84	.09	.22	.17	.43	.19	.50	.82	.35	.27	.03	.17	.54	.36	.54	1.00	
Word 84	.23	.18	.23	.42	.11	.41	.32	.76	.29	.06	.16	.38	.26	.48	.38	1.00
SD	2.45	3.96	2.87	9.78	8.71	6.07	10.07	11.72	2.46	2.40	3.51	10.14	10.00	5.87	9.59	11.87

Table 2

Correlations and Standard Deviations of Observed Variables for High S.L.E. Model of Attitudinal Flexibility, Health Problems, and General Intellectual Ability
(N = 85)

Verbal 1977	1.00														
Space 1977	.32	1.00													
Reason. 1977	.73	.41	1.00												
Number 1977	.39	.09	.36	1.00											
Wrd.Flu.1977	.52	.12	.43	.30	1.00										
Health Status	-.09	.08	-.04	-.01	-.12	1.00									
A.D.L.	-.01	-.03	.08	.12	.01	.59	1.00								
Chronic Cond.	-.12	-.04	.01	.06	-.06	.34	.24	1.00							
Phy. Symptoms	.13	.14	.13	.19	.07	.47	.35	.43	1.00						
Cutback Acts.	-.10	-.04	.07	-.05	-.06	.59	.56	.31	.34	1.00					
Life Stress	-.22	-.31	-.12	-.01	-.16	.19	.35	.25	.10	.23	1.00				
Depression	.01	-.02	-.06	-.02	.22	-.29	-.20	-.20	-.21	-.15	-.39	1.00			
Anxiety	.03	.09	.06	-.06	-.03	-.33	-.24	-.34	-.37	-.11	-.35	.70	1.00		
STAI Trait	.03	.05	.02	.00	.17	-.34	-.30	-.29	-.21	-.12	-.30	.72	.66	1.00	
Gen.Pos.Affect	.04	.10	.00	-.08	.09	-.30	-.33	-.14	-.25	-.17	-.43	.76	.66	.75	1.00
LSIA	.03	.12	-.11	-.07	.04	-.32	-.28	-.28	-.18	-.27	-.26	.62	.47	.68	.76
Intel. Stim.	.35	.23	.46	.19	.34	-.26	-.10	-.24	-.01	-.16	-.20	.32	.37	.43	.29
Group Partic.	.14	.08	.14	.00	.05	-.12	-.08	-.01	-.12	.05	-.10	.14	.24	.30	.20
Soc. Contacts	.09	.02	.28	.19	.12	-.09	.02	.12	.11	-.02	-.01	.10	.13	.22	.14
Verbal 1984	.76	.45	.70	.36	.42	-.24	-.19	-.17	.03	-.17	-.24	.06	.12	.20	.12
Space 1984	.44	.76	.56	.22	.21	-.07	-.02	.06	.09	-.13	-.16	-.05	-.02	-.03	-.03
Reason. 1984	.62	.39	.79	.35	.48	-.06	.00	-.01	.18	.05	-.15	.04	.01	.12	.07
Number 1984	.42	.15	.49	.80	.43	-.15	-.02	.02	.12	-.11	-.03	-.03	-.06	.01	-.09
Wrd.Flu.1984	.44	.18	.38	.29	.80	-.13	.00	-.07	.13	-.06	-.21	.14	.03	.14	.11
Att.Flx.1977	.44	.10	.52	.20	.33	-.30	-.08	-.02	-.07	-.28	-.20	.15	.11	.05	.01
Income 1977	.47	.23	.30	.30	.17	-.16	-.07	-.24	.00	-.19	-.31	.08	.05	.09	.09
Education 1977	.41	.06	.43	.15	.27	-.05	.16	-.03	.03	.09	.04	-.12	-.04	.04	-.21
Age	-.33	-.38	-.34	-.09	-.19	.11	.20	.06	-.04	.20	.24	-.05	.03	-.11	-.11
S.D.	9.14	8.68	5.99	10.38	11.95	.70	.87	1.10	1.84	.83	6.04	3.21	6.33	9.83	10.39

Table 2, Continued

LSIA	1.00												
Intel.Stim.	.28	1.00											
Group Partic.	.13	.27	1.00										
Soc. Contacts	.14	.26	.17	1.00									
Verbal 1984	.16	.39	.14	.30	1.00								
Space 1984	.00	.27	.05	.18	.58	1.00							
Reason. 1984	.05	.44	.23	.33	.73	.52	1.00						
Number 1984	-.10	.25	.03	.27	.49	.37	.54	1.00					
Wrd.Flu. 1984	.04	.37	.02	.24	.39	.28	.50	.43	1.00				
Att.Flx. 1977	-.04	.44	.15	.23	.43	.23	.42	.23	.27	1.00			
Income 1977	.13	.17	.00	-.02	.49	.32	.27	.23	.19	.22	1.00		
Education 1977	-.14	.32	.12	.17	.36	.22	.32	.12	.28	.47	.26	1.00	
Age	-.14	-.21	.04	-.32	-.58	-.42	-.46	-.20	-.19	-.30	-.52	-.01	1.00
S.D.	2.67	2.54	2.46	3.30	9.91	9.53	5.97	10.01	12.84	3.86	3.86	2.90	6.50

Figure 1

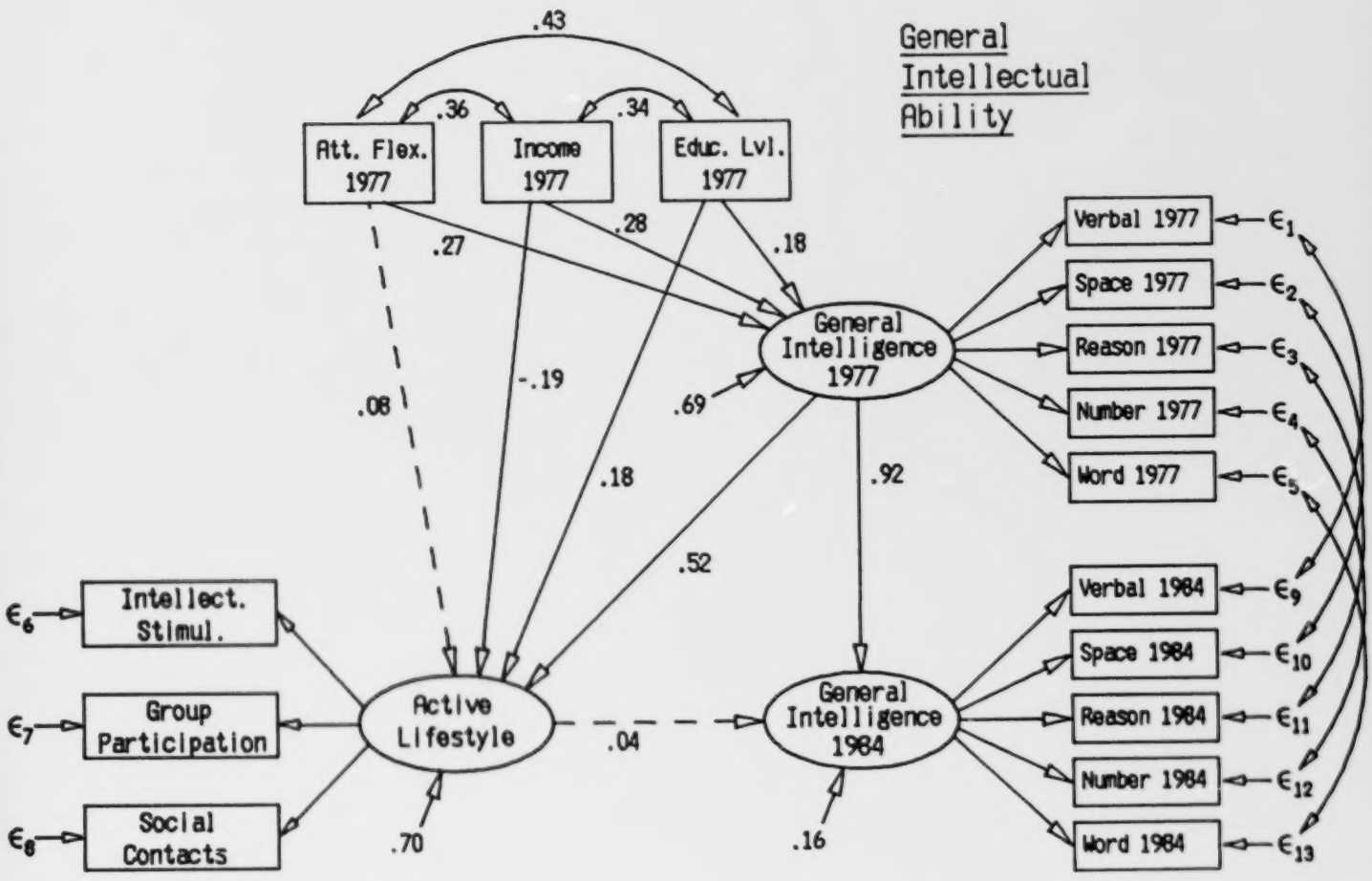
General Intellectual Ability
.43
.36
.34
Att. Flex. 1977
Income 1977
Educ. Lvl. 1977
.27
.28
.18
.08
-.19
.69
.18
.92
.52
General Intelligence 1977
Verbal 1977
Space 1977
Reason 1977
Number 1977
Word 1977
Intellect. Stimul.
Group Participation
Social Contacts
Active Lifestyle
.70
.04
General Intelligence 1984
.16
Verbal 1984
Space 1984
Reason 1984
Number 1984
Word 1984

Figure 2

Path diagram of High Stressful Life Events Model of Attitudinal Flexibility, Health Problems, and General Intellectual Ability